

Amendments to the Claims

The listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1- 40 (Canceled)

41. (New): A nerve stimulator needle apparatus comprising:

a needle capable of carrying an electric current;

a variable control mechanism which is operable to variably control the amplitude of an application of electric current to said needle;

a plurality of electrical connectors connected to said variable control mechanism and said needle which allows said variable control mechanism to remotely connect to a nerve stimulation device which is operable to provide a voltage to said variable control mechanism and to provide a current pulse to said needle having an amplitude which is controlled by said variable control mechanism; and

a housing which holds said variable control mechanism, said plurality of electrical connectors and said needle;

wherein said needle unit further includes depth measurement marks which indicate the insertion depth of said needle.

42. (New): A nerve stimulator needle apparatus comprising:

a needle capable of carrying an electric current;

a variable control mechanism which is operable to variably control the amplitude of an application of electric current to said needle;

a plurality of electrical connectors connected to said variable control mechanism and said

needle which allows said variable control mechanism to remotely connect to a nerve stimulation device which is operable to provide a voltage to said variable control mechanism and to provide a current pulse to said needle having an amplitude which is controlled by said variable control mechanism; and

a housing which holds said variable control mechanism, said plurality of electrical connectors and said needle;

wherein said variable control mechanism comprises a variable optical switching device.

43. (New): The nerve stimulator needle apparatus of claim 42, wherein said variable optical switching device includes a partially colored plate and a fiber optic cable which directs light from a light source to impinge on said partially colored plate, and directs reflected light from said partially colored plate to a sensor.

44. (New): The nerve stimulator needle apparatus of claim 43, wherein said partially colored plate alters color or intensity components of the light impinged on it from said fiber optic cable in response to an application of pressure.

45. (New): The nerve stimulator needle apparatus of claim 42, wherein said variable optical switching device includes a graduated reflective plate and a fiber optic cable which directs light from a light source to impinge on said graduated reflective plate, and directs reflected light from said graduated reflective plate to a sensor.

46. (New): The nerve stimulator needle apparatus of claim 45, wherein said graduated reflective plate alters color or intensity components of the light impinged on it from said fiber optic cable in response to an application of pressure.

47. (New): A nerve stimulator apparatus comprising:

a nerve stimulator device comprising:

a voltage source;

a controller; and

a current source operable to produce an electrical current in response to said controller; and
a needle unit remotely located from said nerve stimulator device and connected to said nerve stimulator device only by at least one electrical conductor, said needle unit comprising:

a variable control mechanism which is operable to receive a voltage from said voltage source and to provide instructions to said controller to variably control the amplitude of said electrical current provided by said current source;

a needle capable of carrying said electric current from said current source having the amplitude controlled by said variable control mechanism;

a housing which holds said variable control mechanism and said needle; and
depth measurement marks that indicate the insertion depth of said needle.

48. (New): A nerve stimulator apparatus comprising:

a nerve stimulator device comprising:

a voltage source;

a controller; and

a current source operable to produce an electrical current in response to said controller; and

a needle unit remotely located from said nerve stimulator device and connected to said nerve stimulator device only by at least one electrical conductor, said needle unit comprising:

a variable control mechanism which is operable to receive a voltage from said voltage source and to provide instructions to said controller to variably control the amplitude of said electrical current provided by said current source;

a needle capable of carrying said electric current from said current source having the amplitude controlled by said variable control mechanism; and

a housing which holds said variable control mechanism and said needle;

wherein said variable control mechanism comprises a variable optical switching device.

49. (New): The nerve stimulator apparatus of claim 48, wherein said variable optical switching device receives light from a light source and includes a partially colored plate and a fiber optic cable which directs the light from said light source to impinge on said partially colored plate, and directs reflected light from said partially colored plate to a sensor.

50. (New): The nerve stimulator apparatus of claim 49, wherein said partially colored plate alters color or intensity components of the light impinged on it from said fiber optic cable in response to an application of pressure, and said sensor converts said altered color or intensity components to a corresponding current signal.

51. (New): The nerve stimulator apparatus of claim 48, wherein said variable optical switching device includes a graduated reflective plate and a fiber optic cable which directs light from a light source to impinge on said graduated reflective plate, and directs reflected light from said graduated reflective plate to a sensor.

52. (New): The nerve stimulator needle apparatus of claim 51, wherein said graduated reflective plate alters color or intensity components of the light impinged on it from said fiber optic cable in response to an application of pressure.